

REMARKS

This amendment is submitted in response to the non-final Office Action mailed on December 15, 2004. Claims 1-18 are pending in this application. In the Office Action, Claims 1-18 are rejected under 35 U.S.C. §112, second paragraph. In response Claims 1, 3-5, 12-14 and 16-18 have been amended, Claims 6 and 15 have been canceled and Claim 19 has been added. These amendments do not add new matter. In view of the amendments and/or for the response set forth below, Applicants respectfully submit that the rejections should be withdrawn.

Applicants have amended Claim 1 to recite, in part, a Pyridinium-Betain compound having the general formula (A), wherein R1 is H or an amino acid side chain that is attached to the structure. Claims 3-5 have been amended accordingly. These amendments are fully supported in the specification, for example, at page 3, line 32, to page 4, line 11 and Examples 1-8. Accordingly, one having ordinary skill in the art would understand that the R1 refers to an amino acid side chain of the particular amino acids as described in the Applicants' specification.

In the Office Action, Claim 15 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. In response, Claim 15 has been canceled.

Claims 1-18 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Specifically, the Office Action alleges that the term "ester derivative" is unclear in the relevant claims. In response, Claim 1 has been amended to address the informalities cited by the Patent Office.

The Patent Office alleges that there is insufficient antecedent basis for the limitation "X is an amino acid or oligopeptide comprising primary and secondary L-amino acids, and is attached via peptide bonds" as recited in Claim 6. In response, Applicants have added new independent Claim 19, which effectively represents the subject matter as defined in Claims 1 and 6. This new claim is fully supported in the specification, for example, at page 5, lines 12-21 and Example 8.

The Patent Office alleges that Claim 12 is unclear because it is not clear what the Pyridinium-Betain compound is being added to because the claim does not recite the host to which the compound is being added. In response, Claim 12 has been amended to address the informalities cited by the Patent Office.

The Patent Office alleges Claims 13-15 are method claims that are improperly dependent upon a composition claim. Specifically, the Patent Office states that Claim 11 is not a method claim, therefore, Claims 13-15 are unclear. In response, Claims 13-15 have been amended to address the informalities cited by the Patent Office.

The Patent Office alleges the phrase "corresponding amino acids or peptides" as recited in Claims 16-18 is unclear. In response, Claims 16-18 have been amended to address the informalities cited by the Patent Office. In this regard, Applicants have amended the Claims 16-17 to recite, in part, a process for the preparation of a Pyridinium-Betain compound using 5-(hydroxymethyl)-2-furaldehyde (HMF) and amino acids or peptides to prepare the Pyridinium-Betain compound. This amendment is fully supported in the specification as one having ordinary skill in the art understands that amino acids or peptides, in general, can be used to prepare the Pyridinium-Betain compound as discussed in the specification.

The Patent Office alleges that the phrase "HMF producing precursors and degradation products thereof with a corresponding amino acids or peptides under conditions sufficient to prepare the Pyridinium-Betain compounds" in Claim 17 is unclear. Applicants respectfully disagree with the Patent Office's assertion. Indeed, the specification provides sufficient detail along with the knowledge of one skilled in the art to point out and distinctly define the metes and bounds of the claimed "HMF producing precursors and degradation products thereof with a corresponding amino acids or peptides under conditions sufficient to prepare the Pyridinium-Betain compounds." For instance, Examples 1 and 3 show the use of D-fructose and triethylamine hydrochloride as HMF producing precursors. One having ordinary skill in the art would know what other relevant precursors and degradation products are. Indeed, not every single possible precursor or degradation product must be listed in the specification. Further, numerous conditions used to prepare the Pyridinium-Betain compounds are disclosed in the specification. See, Specification, Examples 1-3 and 4-8. One having ordinary skill in the art would clearly understand the suitable conditions necessary for the Pyridinium-Betain compounds to be made using the starting material according to the present claims.

Based on at least these noted reasons, Applicants believe that Claims 1-18 fully comply with 35 U.S.C. §112, second paragraph. Accordingly, Applicants respectfully request that the rejection of Claims 1-18 under 35 U.S.C. §112 be withdrawn.

For the foregoing reasons, Applicants respectfully request reconsideration of the above-identified patent application and earnestly solicit an early allowance of same.

Respectfully submitted,

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